

**GREEN BAY METROPOLITAN SEWERAGE DISTRICT**

**REQUEST FOR PROPOSAL**

**FOR**

**GREEN BAY FACILITY and DE PERE FACILITY CLARIFIER REHABILITATION**

NEW Water, the brand of the Green Bay Metropolitan Sewerage District, is seeking a professional consultant for engineering services to complete an engineering study for clarifier rehabilitation at its Green Bay Facility (GBF) and its De Pere Facility (DPF) based on the following information, requirements, and criteria.

**1. Background Information**

NEW Water owns and operates two regional treatment plants in Green Bay and De Pere, WI to treat municipal wastewater generated from residential, commercial, and industrial users within its service area.

The GBF is designed for an influent flow of 49.2 million gals per day (MGD) on a maximum month basis and currently treats an average daily flow of 32 MGD. The GBF is an advanced secondary treatment facility. Preliminary and primary treatment includes raw wastewater screening and primary clarification. Secondary treatment is provided by two parallel single-stage nitrification/denitrification systems consisting of aeration basins and final clarification. The aeration basins have mechanically mixed anaerobic zones operated to provide biological phosphorus removal. Effluent is seasonally disinfected with sodium hypochlorite followed by dechlorination with sodium bisulfite. The GBF has on-site septage receiving facilities that accepts hauled wastes 24/7/365. On-going construction will provide the GBF with enhanced biological phosphorus removal and upgraded solids handling facilities including biosolids thickening, anaerobic digestion, nutrient harvesting, dewatering, and incineration.

The DPF is designed for an influent flow of 14.0 MGD on a maximum month basis and currently treats an average daily flow of 8 MGD. The DPF is an advanced tertiary treatment facility consisting of preliminary treatment with screening and grit removal, secondary treatment with a two-stage activated sludge system with intermediate and final clarification. The aeration basins have mechanically mixed anaerobic zones operated to provide biological phosphorus removal. Tertiary treatment is provided by gravity filtration. Effluent is seasonally disinfected with ultraviolet radiation.

The clarification facilities at the GBF and DPF were originally constructed and placed into operation as indicated below:

Location	GBF North Plant Primary Clarifiers	GBF North Plant Final Clarifiers	GBF South Plant Final Clarifiers	DPF Intermediate Clarifiers	DPF Second Stage Clarifiers
Year Constructed	1976	1976	1993	1980	1980
No. of Units	4	8	2	2	3
Shape	Square	Square	Circular	Circular	Circular
Size					
Basin	120 ft x 120 ft	123 ft x 123 ft	135 ft dia	100 ft dia	125 ft dia
Collector	120 ft <sup>(1)</sup>	120 ft <sup>(1)</sup>	135 ft	100 ft	125 ft
Sidewater Depth	12.00 ft	15.00 ft	17.83 ft	12.83 ft	10.75 ft
Type of Mechanism	Center-feed	Center-feed	Center-feed	Center-feed	Center-feed
Location of Effluent Trough	Inboard	Inboard	Outboard	Inboard	Inboard
Type of Sludge Withdrawal	Scraper	Suction pipe	Suction pipe	Suction pipe	Suction pipe

(1) Mechanism provided with corner sweeps

## 2. Description of Project

The Consultant shall conduct onsite inspection of the existing construction, structural and mechanical condition, and operation of existing clarification facilities, including basins, clarifier equipment, and scum and sludge removal and pumping equipment. The Consultant shall also review the current and projected flows and loadings to the clarification facilities and evaluate the existing facilities for compliance to current codes and design standards. In addition, the Consultant shall review the Green Bay Facility Headworks Odor Control Study, Operational Evaluation Report for Phosphorus and Suspended Solids and the Report of Secondary Clarifier Studies at the NEW Water Green Bay Facility to evaluate the feasibility and cost effectiveness of the findings and recommendations contained within the cited studies.

The Consultant shall prepare technical memorandums for each component identified in the Scope of Services hereinafter describing the results of the onsite inspection. The technical memorandums shall be incorporated into an engineering study to be completed by the Consultant to identify and evaluate alternatives for replacement, upgrades and/or improvements to the clarification facilities at the GBF and DPF. The engineering study should summarize the evaluations, discuss feasible alternatives, develop a recommended plan for clarifier rehabilitation at the GBF and the DPF, and develop planning level (AACE International Class 3) budgetary costs. The engineering study shall determine the alternative that best meets the long-term treatment requirements at NEW Water's treatment facilities.

## 3. Scope of Services

The Scope of Services to be provided by the Consultant under this proposal is as follows:

### a. Project Management

The Consultant shall manage the project to coordinate work efforts of all design disciplines, monitor the project budget and schedule, and keep NEW Water informed of project progress and issues. The following activities shall be performed:

#### 1. Project Kickoff Meeting

The Consultant shall conduct a kick-off meeting with NEW Water, including review of the following items:

- Project objectives
- NEW Water expectations
- NEW Water preferences relative to the following: equipment selection, utilization of existing facilities, materials of construction, and design standards
- Factors critical to project success and the associated tasks
- Roles and responsibilities of NEW Water and the Consultant project team members
- Project schedule/key milestones
- Data and information needs, including geotechnical investigations

The Consultant shall provide a meeting agenda; and following the meeting, a summary of meeting discussions/decisions.

#### 2. Workshops/Meetings

The Consultant shall provide a meeting agenda and minutes for all workshops/meetings.

It is anticipated that workshops would be conducted to present and discuss technical memorandums that are prepared addressing:

- the results of the Consultant's onsite inspection of the facilities
- potential modifications to the basins to improve hydraulic distribution of flow and hydraulic improvements within the basins as referenced in the clarifier performance study
- potential technologies and modifications and improvements to provide odor control as referenced in the odor control study

In addition, a meeting for the consultant to present the recommendations of the study would be conducted at the conclusion of the study.

### 3. Project Coordination

For the duration of the project, the Consultant's Project Manager will have monthly calls with NEW Water's Project Manager to update NEW Water on project progress and identify any issues for resolution.

### 4. Invoices/Progress Reports

The Consultant shall prepare and submit invoices and progress reports on a monthly basis. The monthly invoices shall be itemized by task and shall indicate individuals' hours for each task performed during the billing period.

The progress reports will be in letter format and summarize activities completed to date, financial and schedule status, and identify any potential problems, critical issues, and planned corrective actions. NEW Water's and Consultant's project managers will review the progress reports and invoices on a monthly basis.

### 5. Project Quality Management

The Consultant shall implement proven QA/QC measures throughout the project. Consultant shall describe their QA/QC plan in the Proposal.

The Consultant shall develop a QA/QC form that documents that QA/QC review has been completed on any document prior to submittal to NEW Water. The QA/QC form shall be included with all deliverables and at a minimum, shall include the following information:

- Document title
- Document author
- Draft # and date
- QA/QC reviewer
- Date of QA/QC review with reviewer initials
- Verification that NEW Water comments have been addressed. Consultant shall provide a memorandum describing actions taken to address NEW Water comments.

### 6. Project Deliverables

All project deliverables shall be submitted as both paper copies and electronic copies in native format and Portable Document Format (PDF).

- Meeting Agendas - 1 copy
- Meeting Minutes - 1 copy
- QA/QC Form - 1 copy

- Invoices/Progress reports - 1 copy
  - Field Survey and Condition Assessment Technical Memorandums – up to 5 copies (draft and final versions)
  - Engineering Alternatives Study– up to 10 copies (draft and final versions)
- b. Field Survey and Condition Assessment: The Consultant shall conduct onsite inspection of the existing construction, structural and mechanical condition, and operation of existing facilities including basins, clarifier equipment, piping, and scum and sludge removal equipment and pumping equipment.

***The Consultant is advised that multiple trips to the site will be required to complete the onsite inspections. At the GBF, a maximum of 2 North Plant secondary clarifiers and 1 South Plant secondary clarifier can be taken out of service at a time. At the DPF, 1 of the intermediate clarifiers and 2 of the final clarifiers must remain in service at all times. In addition, the schedule for conducting the onsite inspections will need to be coordinated with plant operations to avoid inclement weather and elevated seasonal flows and to allow plant staff sufficient time to remove basins from service, clean, and rotate clarifiers back into service before conducting subsequent inspections. It is estimated that NEW Water will require 1 week to rotate clarifiers in/out of service.***

***Also, consultant's personnel that will be entering the basins to complete the onsite inspections will need to have current OSHA 10 hour Construction Safety and Health certification and a current certification for confined space entry.***

The Consultant shall prepare a draft technical memorandum for each task below:

Task 1 – GBF Primary Clarifiers

- 1.1 Conduct a field survey and condition assessment.
- 1.2 Evaluate operability and maintainability of existing equipment including access for confined space entry and retrieval, access platforms for cleaning basin, effluent launders and scum beaches.

Task 2 – GBF Secondary Clarifiers

- 2.1 Conduct a field survey and condition assessment.
- 2.2 Evaluate operability and maintainability of existing equipment including access for confined space entry and retrieval, access platforms for cleaning basin, effluent launders and scum beaches.

Task 3 – GBF Headworks

- 3.1 Complete a field survey to familiarize Consultant with the facilities discussed in the Green Bay Facilities Headworks Odor Control Study.

Task 4 – DPF Intermediate and Final Clarifiers

- 4.1 Conduct a field survey and condition assessment.
- 4.2 Evaluate operability and maintainability of existing equipment including access for confined space entry and retrieval, access platforms for cleaning basin, effluent launders and scum beaches.

The Consultant shall submit the draft technical memorandums summarizing their findings and conduct a review workshop. The Consultant shall revise the technical memorandums incorporating revisions from the workshop and written review comments received from NEW Water.

- c. Engineering Alternatives Study: The Consultant shall prepare and provide a report evaluating alternatives

and recommending the most cost-effective alternative for ensuring the long-term operability and reliability of the clarification facilities at the GBF and the DPF to maintain efficient operation and maintain required levels of treatment. The recommended alternative shall address the deficiencies identified in the Field Survey and Condition Assessment Technical Memorandums. The technical memorandums shall be included as appendices to the engineering alternatives study report.

Specific tasks shall include:

#### Task 1 – GBF Primary Clarifiers

- 1.1 Evaluate potential modifications to existing equipment and structure to eliminate corner sweeps.
- 1.2 Evaluate rehabilitation or replacement of existing mechanisms.
- 1.3 Evaluate removal and replacement of existing effluent launders and concrete supports with new effluent launders and supports.
- 1.4 Evaluate cover options for clarifiers or effluent launders for odor control, algae control, and weatherization.
- 1.5 Evaluate existing scum/grease collection & pumping facilities including alternatives for the addition of grinders on the inlet to the Primary Sludge Tanks installed as part of the R2E2 project.

#### Task 2 – GBF Secondary Clarifiers

- 2.1 Evaluate improvements identified in the Report of Secondary Clarifier Studies at the NEW Water Green Bay Facility.
- 2.2 Evaluate potential modifications to existing equipment and structure to eliminate corner sweeps for the North Plant secondary clarifiers.
- 2.3 Evaluate rehabilitation or replacement of existing mechanisms.
- 2.4 Evaluate removal and replacement of existing effluent launders and concrete supports with new effluent launders and supports for the North Plant secondary clarifiers.
- 2.5 Evaluate existing and alternative sludge draw-off and pumping facilities.
- 2.6 Evaluate cover options for clarifiers or effluent launders for algae control and weatherization.
- 2.7 Evaluate existing scum collection & pumping facilities.
- 2.8 Evaluate options for re-combining the effluent from the north plant biological reactors and distributing flow equally to all north plant final clarifiers in service.

#### Task 3 – GBF Headworks and Primary Clarifier Odor Control

- 3.1 Evaluate alternatives and technologies for incorporating odor control facilities for the GBF headworks and primary clarifiers as recommended in the Green Bay Facility Headworks Odor Control Study.
- 3.2 Provide conceptual layout and locations for selected alternative.
- 3.3 Provide budgetary (ACE International Class 4) cost estimate of selected alternative.

#### Task 4 – DPF Intermediate and Final Clarifiers

- 4.1 Evaluate cover options for clarifiers or effluent launders for algae control and weatherization.
- 4.2 Evaluate operating configurations for clarification.
- 4.3 Evaluate existing scum/grease collection & pumping, including addition of service water sprays to the Intermediate Scum Box for foam control.
- 4.4 Identify and evaluate alternatives for concentrating scum and reducing volume to be transported to GBF, including identifying and evaluating alternatives for odor control.
- 4.5 Evaluate existing and alternative sludge draw-off and pumping facilities.
- 4.6 Evaluate alternatives for providing basin drains at the existing Intermediate Clarifiers, Second Stage Aeration Basins, and Final Clarifiers.

The Consultant shall submit the draft engineering alternatives study and conduct a review workshop. The Consultant shall revise the engineering alternatives study incorporating revisions from the workshop and written review comments received from NEW Water.

#### 4. Proposal Format Requirements

The Consultant's Proposal shall be submitted in conformance with the following format:

- a. Summary of scope of services. (5 pages maximum)
  - i. Description of the services proposed by your firm for execution of the project.
  - ii. Description of QA/QC Plan.
  - iii. Qualifications and List of similar past project experience.
  - iv. Schedule, including milestones, meetings and submittals dates for approval.
  
- b. Work Plan/Level of Effort/Cost Proposal. (10 pages maximum)
  - i. List of all major tasks.
  - ii. List of all proposed personnel by task, key personnel by name and additional personnel by title.
  - iii. Estimated Level of Effort and hourly billing rate for each proposed project participant by task.
  - iv. Itemization of expenses by task.
  - v. Subtotal cost of each task and each participant within each task.
  - vi. Total cost of each participant for all tasks and grand total of all costs.
  - vii. Level of Effort/Cost Proposal shall reflect the tasks outlined in the RFP.
  
- c. Project team/key personnel. (2 pages maximum)
  - i. Provide an organizational chart depicting the project team.
  - ii. Identify key personnel, including project directors/managers and discipline of lead personnel.
  - iii. Indication location(s) where work will be conducted.
  
- d. Appendix/resumes
  - i. Provide resumes of key personnel to be assigned to the project. Resumes shall be a maximum of 2 pages for the lead engineer and project manager. Resumes for the remainder of the team shall be a maximum of 1 page.

#### 5. Proposal Submission and Schedule

Ten (10) paper-printed copies and an electronic copy in Portable Document Format (PDF) of the proposal shall be furnished. The proposals will serve as a basis for selection of a consultant and subsequently, for negotiation and execution of a formal contract.

Proposals shall be addressed to:

Phil Mentink, Staff Engineer  
NEW Water (Green Bay Metropolitan Sewerage District)  
2231 N. Quincy Street  
Green Bay, WI 54302  
[pmentink@newwater.us](mailto:pmentink@newwater.us)  
(920) 438-1033

All questions must be submitted electronically via e-mail to Phil Mentink at [pmentink@newwater.us](mailto:pmentink@newwater.us) by December 20, 2017 at 4:00 p.m., local time.

Proposals must be received at the address above by no later than 1:00 p.m., local time on January 5, 2018.

## **6. Selection Process**

Proposals will be evaluated based on monetary and non-monetary criteria, including

- Project Team / Personnel
- Firm Qualifications
- Project Approach
- Schedule
- Cost

## **7. Contract**

Terms of the formal contract will be negotiated between NEW Water and the selected Consultant. NEW Water anticipates that the scope of work and level of effort described in proposals will be refined enough through NEW Water/Consultant discussions such that a mutually acceptable project scope, level of effort, and cost can be developed.

NEW Water anticipates that a "Labor and Expenses" with a cost ceiling contract format will be utilized. Expenses, including subconsultants, will be paid on actual expense incurred with no consultant markup applied.

It is anticipated that the contract will be completed no later than December 31, 2018.